

THE LAST WORD

LET 1



THE
LAST
WORD



The Last Word
on improvements in
Wood Working
Machinery



American Wood Working Mach'y Co.
Rochester, N. Y.



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The Last Word

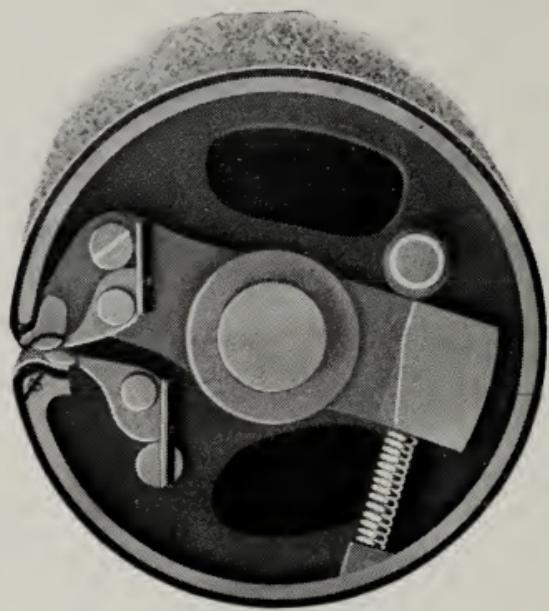
THIS booklet is coming to you each month, with a brief message of what we are doing to improve and perfect American Wood Working Machinery methods that you may find of advantage to you in your business.

We owe it to you as well as to ourselves to keep you posted as to what we are doing to make our machines better today than they were yesterday.

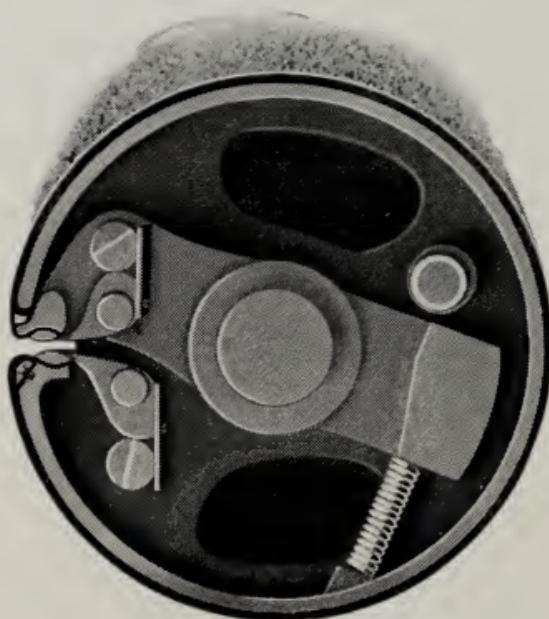
We are going to deal with facts and shall not tire you with unnecessary words. There won't be said one thing in this booklet that isn't necessary to a clear understanding of the subject.

This month we have chosen our line of *three* and *four drum sanders* as the subject matter for this issue and you will find set forth in clear detail in the following pages the features that go to make up the *last word* in sander manufacture.

Clamps Open



Clamps Closed



The Drums on the Columbia Roll Feed Sander

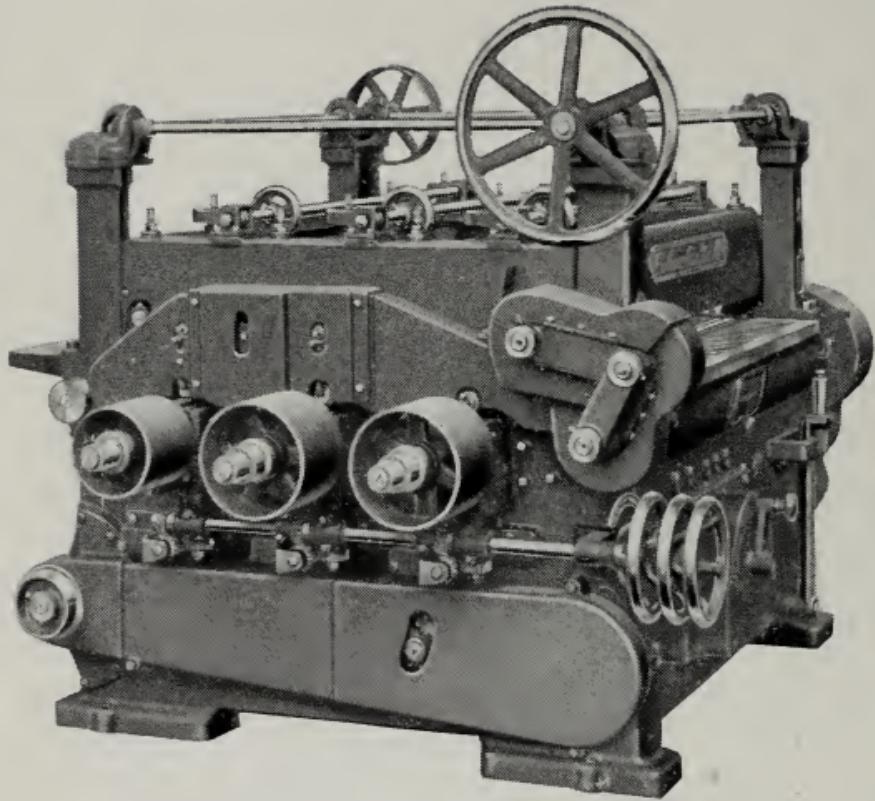
American New Columbia Roll Feed Sanders

No. 10—Three Drum Sander

No. 11—Four Drum Sander

COLOMBIA Sanders were the first machines made with a successful automatic takeup drum. In recent years many improvements have been made in Columbia Sanders but the splendid performance and reputation of our former machines make it advisable to retain the name Columbia and so, our new Sanders, with their recent improvements, are called Columbia No. 10 and No. 11,—the No. 10 designates the three drum machine and the No. 11, the four drum Sander. The latter is made only in the 49", 55" and 61" widths, and has four pressure rolls and five upper and five lower feed rolls. The No. 10, has three pressure rolls and four feed rolls top and bottom.

Fundamentally these machines are the same as they have always been and this is particularly true of the construction of the drums and the general design of the machine.

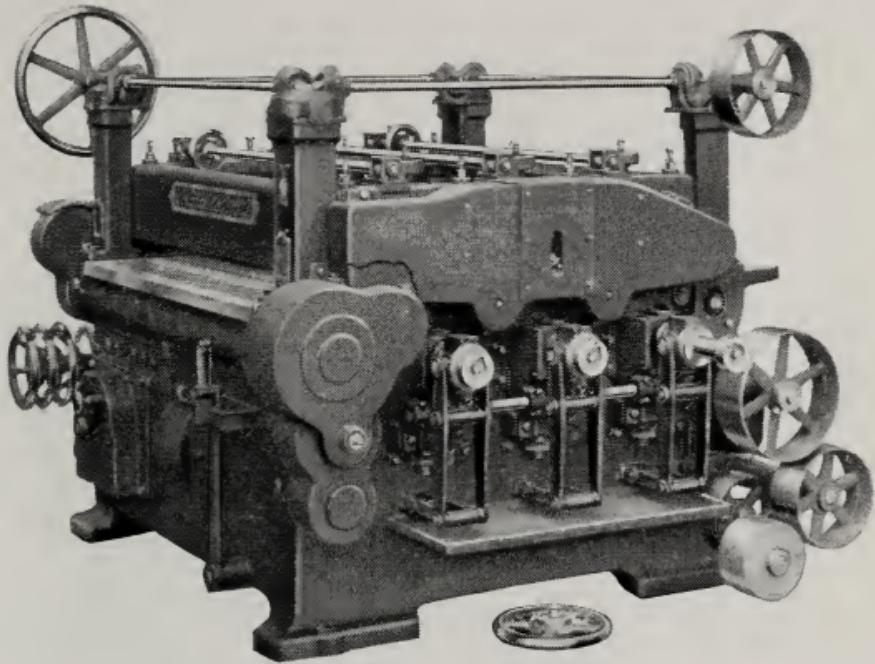


Left Side—Belt Drive

Columbia No. 10 Three-Drum Roll Feed Sander

The improvements consist more in the details of construction than in the principles involved in the construction.

The principle of the roll feed is the same as before, but the method of driving the rolls by chains instead of by gears is an improvement. Driving the rolls by chains and sprockets has no influence whatever on the

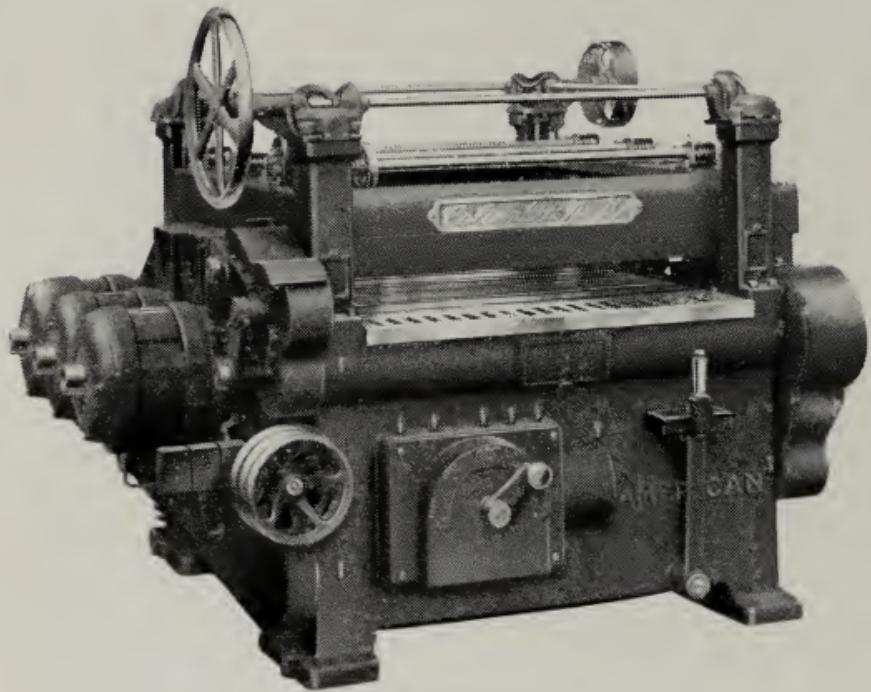


Right Side—Belt Drive

roll pressure, as is the case with gears. Consequently the stock as it passes the rolls is under an even pressure at all times.

The driving action is very smooth and a device is provided for establishing the proper tension of the chain and for taking up the slack occasioned by wear should it ever become necessary.

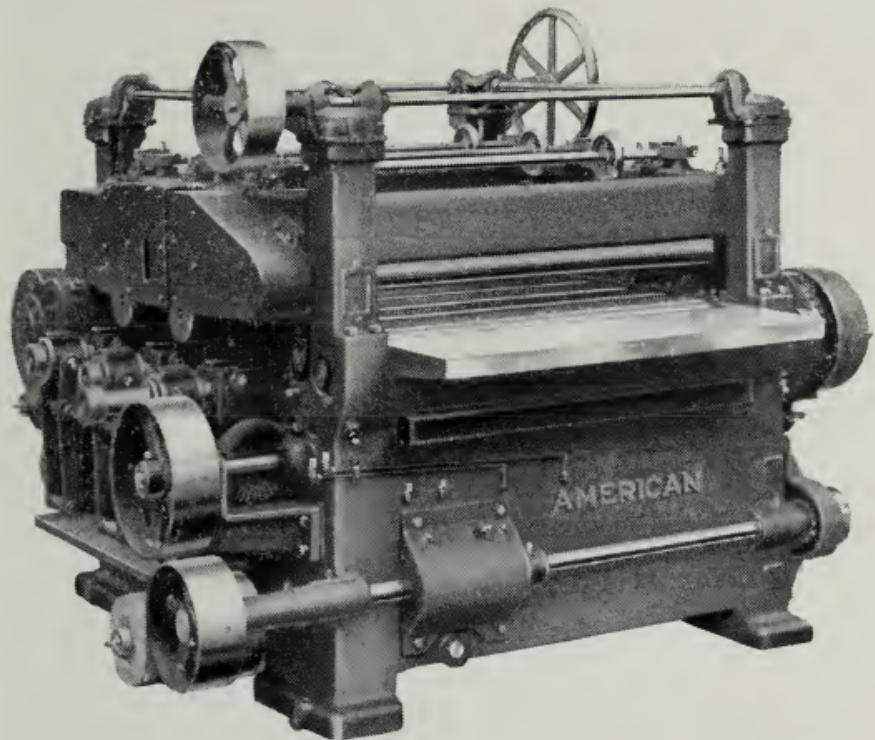
Another improvement in the feeding mechanism consists in the boxes being fitted into machined pockets, thereby eliminating the possibility of any forward or backward movement.



Left Side—Motor Drive

Columbia No. 10 Three-Drum Roll Feed Sander

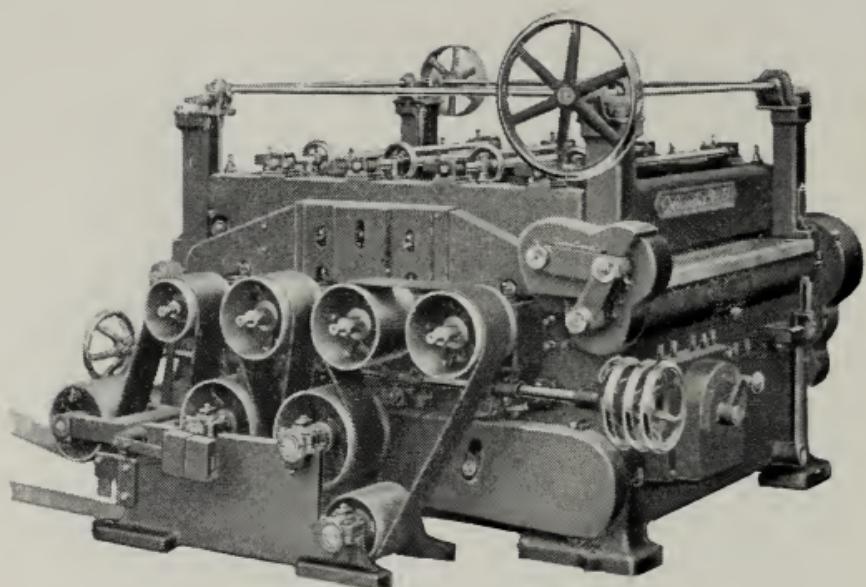
YOKED boxes for the drums are another improvement that is very important. While yoking boxes together has for years been common practice in the construction of Planers and Matchers, Moulders and Surfacers, this is the first time, so far as we know, that the principle has been applied to Sanders. Boxes are yoked to give rigidity and to insure alignment to the working member; and this principle is just as im-



Left from the Rear—Motor Drive

portant in the Sander as in any other machine. The yoked boxes adjust vertically in planed ways and are provided with adjustable gibs to prevent any lost motion.

Another improvement with reference to the drums, is the method of revolving the drum shafts by a detachable hand wheel with automatic lock, when the drums are to be recovered with sandpaper and this is done at the right side of machine where there are no driving belts or motors to interfere with the work.

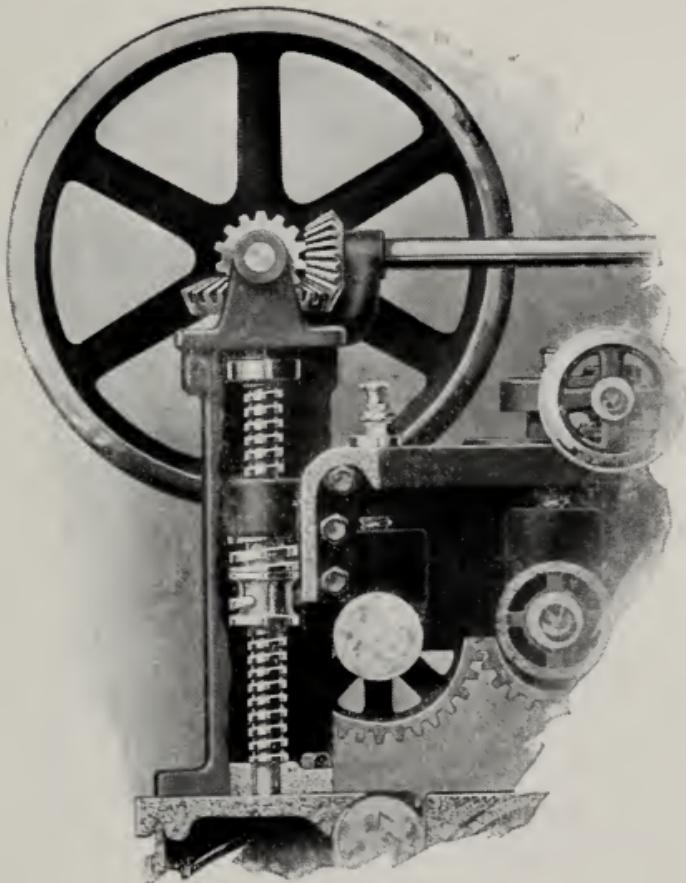


Left Side—Single Belt Drive

Columbia No. 11 Four-Drum Roll Feed Sander

Another improvement with reference to the drums consists in the vertical adjustment by worm, worm wheel and screw.

The method of removing the dust from the machine is an improvement of note. Instead of taking the dust from the bottom which is the usual practice, it is blown through a narrow rectangular opening at the back which extends the full width of the machine. The dust pan is located the proper distance from the drums, and this improved method of removing the dust keeps the machine perfectly clean.



Rigid Screw Corner Post for Feed Works

A NOTEWORTHY feature in the construction of the Columbia Sander is found in the method of supporting the upper feed works frame, whereby the greatest rigidity possible is obtained.

The four cast iron corner posts contain each a short, heavy screw with a bearing top

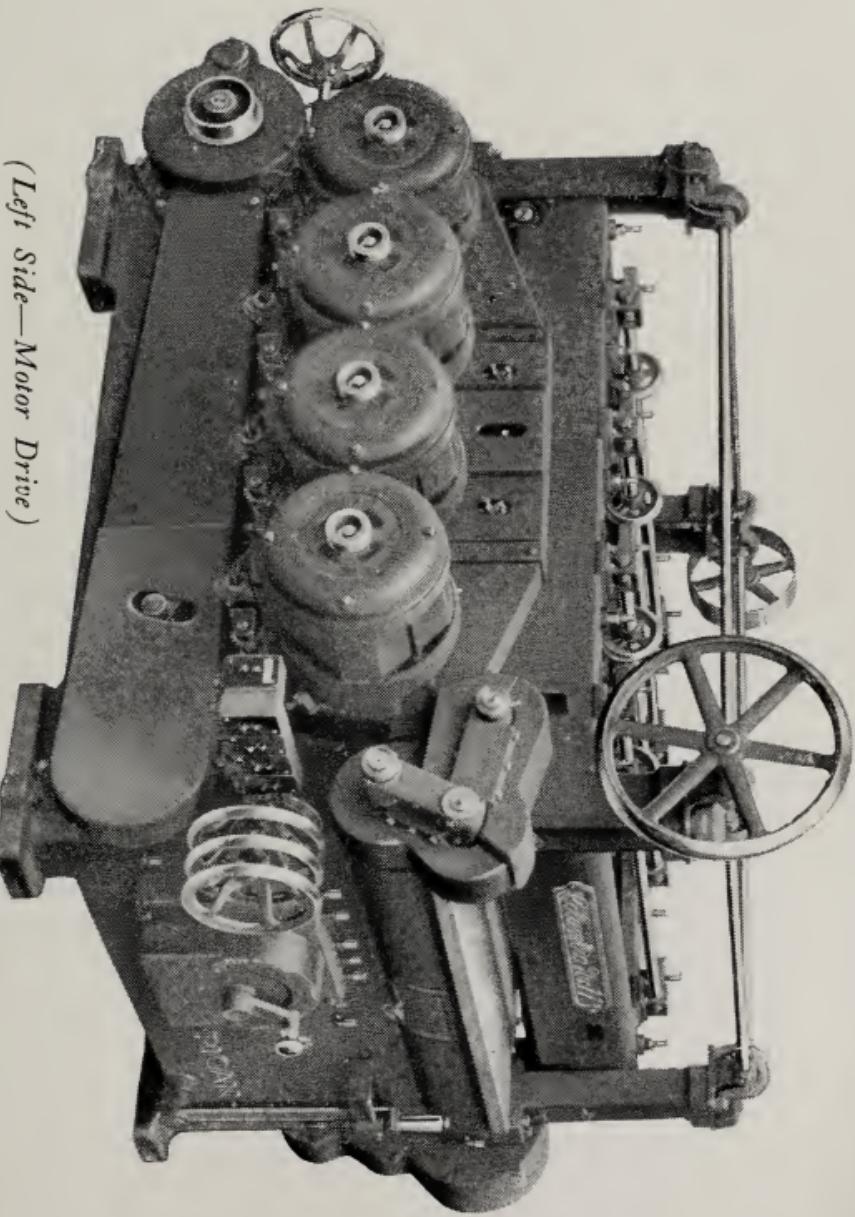
and bottom. To these screws the frame is attached and a coil spring with a take-up nut is placed below it to take up any wear that may appear in the screw.

There are sanders whose only support for the feed roll frame is four long corner screws fastened only at the bottom; with all such the roll frame is never steady and when feeding thick stock it will sway back and forth. Not so with the Columbia—there is absolute rigidity even when the roll frame is up to its highest point. Operation is by hand or power. The vertical lever shown at the front operates the power hoist.

Quick Change of Feed Speed

ON the Columbia Sander there are three speeds of feed produced quickly by our gear change illustrated on page 14. The principle is about the same as that used in automobiles and is instantaneous.

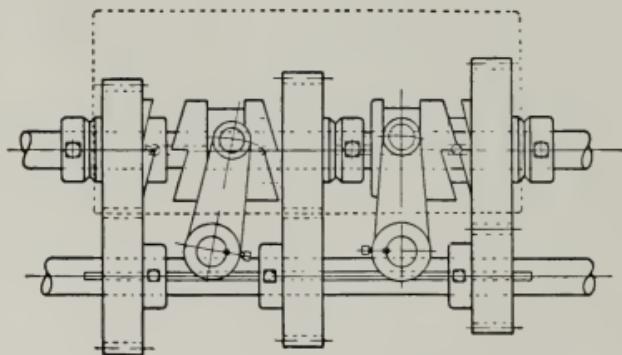
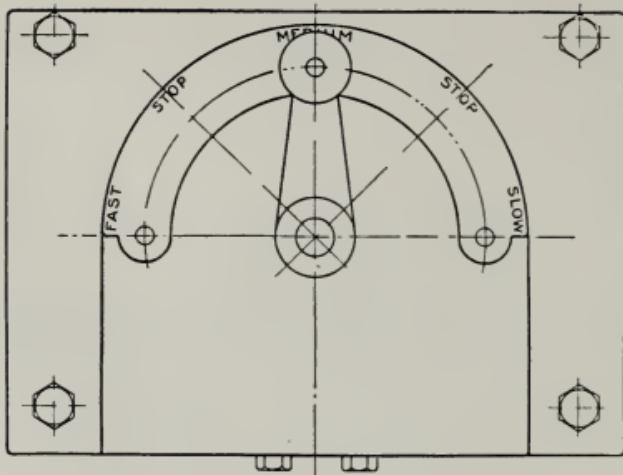
The lever and the segment are located on the left hand side of the lower front girt.



(Left Side—Motor Drive)

Columbia No. II, Four-Drum Roll Feed Sander

(Four Pressure rolls—Five upper and five lower feed rolls) (Made only in 49, 55, and 61 inch widths)



Quick Change of Feed Speed

The segment contains five holes—three for the different speeds of feed, and two intermediate holes for instantaneously stopping the feed.

All the component parts of the device may be easily replaced should occasion demand it. The device is accessible through an opening in the front girt of machine.

Automatic Sand-Paper Take-up

THE illustration on first page of this booklet shows two transverse sections of the Columbia Sand-paper drum and reveals the operation of our Automatic Take-up, which, we claim, is the simplest and most efficient device of its kind made.

The drums are cast in one piece (not made by short sections set-screwed to shaft), which greatly enhances the rigidity of the shaft removing from it all trembling.

The Take-up frame or paper stretcher is also cast in one piece, and swings loosely on the drum shaft. Before it is inserted into the cylinder it is carefully balanced.

The clamps consist of an oval steel bar fitting closely in an oval seat. One clamp is fastened to the cylinder casting, the other to the Take-up frame. They are actuated by eccentric clamp shafts. Turning these in one direction closes them, and turning them in the opposite direction opens them.

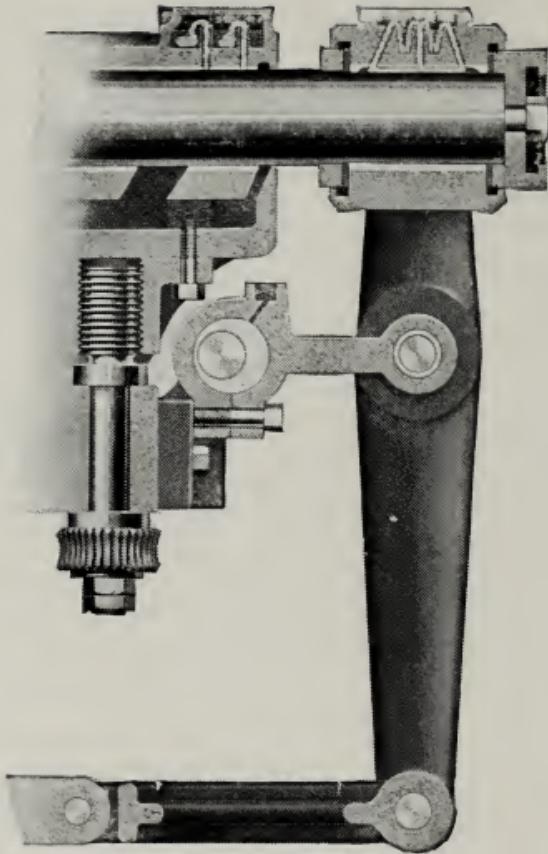
The clamp shafts press on a series of flat springs in order to accommodate different thickness of paper at the same time, furnishing an excess of pressure. The paper being held in oval seats with the aforesaid excess of pressure can never pull out.

The Take-up is held back by a series of eccentrics while the paper is being put on the drum. As soon as these are released the coil springs come into action pushing it towards the other side of the open slot. As it is mounted on the central shaft and moves on the line of the circumference, any slack of paper that may occur will instantaneously be taken up as it appears.

To put the paper on the Columbia drum is the simplest kind of a job and requires but a moment. Place one end of the paper into the set of clamps on the strike side of the drum and close the clamps; then revolve the drum until the other set of clamps appear; insert the other end of the paper into the remaining set of clamps and close them. This done, release the eccentric, and the work is finished.

If it should become necessary to re-cover the drums with felt or canvas the operation is easy and consumes but little time. There is a half-round strip of steel under which is fastened the felt on the strike side of the drum. The other end is simply tucked in and held by the take-up. When it is remembered that there are sanders on which the drums have to be taken from the machine before they can be re-covered, this is no small item in favor of the Columbia.

*The Columbia
is 100 per cent
efficiency*



A Perfectly Central and Non-Cramping Oscillator

THE oscillator is the most delicate piece of mechanism in the construction of a sander and the most difficult in which to overcome wear and lost motion. As implied in the title, its action must be perfectly central and there must be no cramping. In

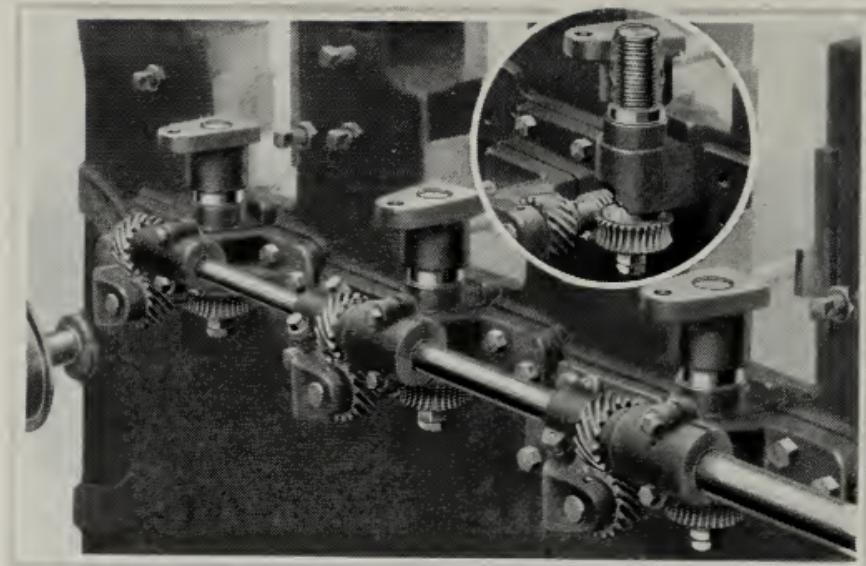
other words, there must be no pulling up and down.

The flexible joints together with the eccentric and strap insure an absolutely central oscillation.

Means for the perfect circulation of oil is an essential feature of the Columbia oscillator, as well as of the drum shaft bearings.

Provision is made for taking up lost motion in the oscillator bearings by the reversed collar on the end of the drum shaft which is filled with fibre washers. Babbitted washers are located between the collars and the oscillator boxes to prevent any wear there.

The Columbia Oscillator follows with perfect freedom the raising and lowering of the drums and runs smoothly and evenly without shocks or jars, and, we believe, is far superior to any other.



A Positive Device for Verticle Adjustment and Alignment of Drums

THE illustration above shows the construction of the mechanism for raising and lowering the drums—by worm, worm wheel and screw.

The illustration is taken from the opposite side of the machine and shows the method of aligning the drums on the Columbia Sander.

By the removal of the two cap screws shown, half of the bearing of the adjusting



shaft at this end may be removed, which allows the worm wheel to be disengaged from the gear on the raising screw. This makes the drum adjustable from one end only, should it become necessary to realign the drums. This device is as simple as it is effective.

Schedule of Sizes, Weight, etc.

Figure	Style	Size	Floor Space	Horse-power	Weight, Pounds	Boxed for Export Wgt., Lbs.	Cu. Ft.	Code
10700	No. 10—three—Drum	31" x 8"	5'2" x 6' 5"	10 to 20	7700	8900	256	<i>Acamo</i>
10711	" "	37" x 8"	5'2" x 6'11"	10 to 20	8200	9500	265	<i>Acani</i>
10722	" "	43" x 8"	5'2" x 7' 5"	15 to 25	8700	10000	280	<i>Acaoh</i>
10733	" "	49" x 8"	5'2" x 7'11"	15 to 25	9300	10900	300	<i>Acaov</i>
10744	" "	55" x 8"	5'2" x 8' 5"	20 to 30	9800	11700	320	<i>Acapb</i>
10755	" "	61" x 8"	5'2" x 8'10"	20 to 30	10500	12500	345	<i>Acarc</i>
10766	" "	67" x 8"	5'2" x 9' 5"	20 to 30	11200	13200	380	<i>Acarn</i>
10777	" "	73" x 8"	5'2" x 9'11"	25 to 35	11800	13800	430	<i>Acast</i>
10788	" "	79" x 8"	5'2" x 10' 5"	25 to 35	12700	14900	475	<i>Acaud</i>
10799	" "	85" x 8"	5'2" x 10'11"	25 to 35	13600	15900	520	<i>Acauv</i>
10800	No. 11—four—Drum	49" x 8"	5'2" x 7'11"	15 to 25	13700	15800	430	<i>Acaur</i>
10811	" "	55" x 8"	5'2" x 8' 5"	20 to 30	14200	16300	450	<i>Acava</i>
10812	" "	61" x 8"	5'2" x 8'10"	20 to 30	14900	17000	470	<i>Acavi</i>
	Sander any width to open 12" thick, extra.....							<i>Zuroc</i>
	Motor Drive 5, Standard motor base and pulley for belt connection to counter, extra.....							<i>Ebawo</i>
	Motor Drive 9, Motors mounted directly on drum shafts, extra.....							<i>Ebkjf</i>

Details of Columbia Nos. 10 and 11 Roll Feed Sanders

Top Frame

Carries the pressure and upper feed rolls.
Supported on four rigid corner posts.
Adjusts up and down by hand or power
on $1\frac{7}{16}$ " screws with means for eliminating
back lash caused from wear.

Bottom Frame or Base of Machine

Built up of four main castings strongly
girted and bolted together. Four drum
machine has wide center girt from top to
bottom as well as the two end girts.

Supports the lower feed rolls and the
drum yokes.

Provides an opening at the rear for dust
removal.

Carries inside of it the clutch mechanism
for changing the feed, and the power
hoist. Has openings for access to these
devices.

Feed Works

Consists of four feed rolls above and four
below (for the No. 10) journaled in side
clamping boxes fitted into machined

pockets in the frame. No. 11 Sander has five rolls above and five below.

Rolls are $3\frac{7}{16}$ " in diameter.

Rolls are driven by steel roller chains and sprockets; and need no adjustment after leaving factory. Means are provided for adjustment however, if it should become necessary.

Rates of feed are 12, 15 and 20 feet per minute, instantaneous, and controlled by lever at front of machine.

Pressure Rolls

On the No. 10 there are three pressure rolls; on the No. 11, four.

They are made of steel tubing $4\frac{7}{8}$ " in diameter; and are adjusted by the small hand wheels on top of machine at the left side.

Pressure is given by coil springs of sufficient size and length to be effective.

Drums

Cast in one piece of semi-steel; webbed inside with several partitions for strength and support for shafts.

No. 10 machine has three; No. 11, four. Drums are supported in yoked boxes

fitted into machined pockets.

Boxes are 10" long by 2½" diameter, side clamping type.

Drums have automatic paper take up which never permits the paper to sag or wrinkle.

Drum yokes adjust vertically by the group of handwheels at the front of machine. Adjustment is by worm, worm wheel and screw. Yokes are adjustable for alignment.

Drums are covered with felt and can be easily recovered by the operator.

Power Hoist

Operated by lever at front of machine.

Mechanism is enclosed and accessible.

Oscillators

Perfectly central and non-cramping.

Provision is made for taking up end play.

Countershaft

Tight and loose (self-oiling loose) pulleys vary with the size of the machine and are as follows: 31", 37" and 43", machines 12"x6 $\frac{3}{8}$ "; 49" and 55"—12"x7 $\frac{3}{8}$ "; 61", 67", 73", 14"x8 $\frac{3}{8}$ ".

Speed of countershaft 1120 R.P.M.



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